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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/448,990 05/24/95 TANAKA

Y 0649-0487P-S

EXAMINER

ZITUMER, F

ART UNIT

PAPER NUMBER

4

1505

DATE MAILED:

06/13/96

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This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

- ☒ This application has been examined ☒ Responsive to communication filed on 5/14/96 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s) 15 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-10 are pending in the application.
Of the above, claims 7-10 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-6 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

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15.

Applicant's election with traverse of Group I, claims 1-8, in Paper No. 3 is acknowledged. The traversal is on the ground(s) that the claims of all the groups are closely related. This is not found persuasive because applicant did not distinctly and specifically point out any errors in the restriction requirement. Applicant's election of methylmethacrylate as the ultimate species is acknowledged. Claims 1-6 read on said species and are being examined. Applicant's additional election of a second species is improper because the examiner not applicant has the option of selecting additional species to search. Further the election of a species of peracid per se was not required in the prior office action. Accordingly, upon the allowance of claims reading on methylmethacrylate the remaining species of Group I, i.e. the non-elected species of claims 6-8, will be examined in an order determined by the examiner.

The requirement is still deemed proper and is therefore made FINAL.

16.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-4 are rejected under 35 U.S.C. § 102(b) as being anticipated by Tanaka et al., EP-A- 0 584 597.

Tanaka teaches deproteinized natural rubber having a nitrogen content of less than 0.02% by weight (Table 1, Example 1, Claim 2) and "no" infrared absorption at 3280 cm⁻¹ (page 4, lines 46-48). Said rubber may be blended with other components commonly employed in conventional rubber compositions, i.e. the rubber may be modified (page 19, lines 18-27). In Example 1 a creamy latex of deproteinized rubber is modified by reaction with calcium chloride to separate a solid rubber (page 9, lines 44-50). Additional modifications of the deproteinized rubber are set forth in Example 2. The disclosures of Tanaka are commensurate with the claimed invention.

17.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same

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person or subject to an obligation of assignment to the same person.

Claims 5 and 6 are rejected under 35 U.S.C. § 103 as being unpatentable over Kondo et al., U.S. Patent 4,208,490, taken with Tanaka et al., EP-A- 0 584 597.

Kondo teaches enhancing the physical properties and appearance of natural rubber by grafting with methylmethacrylate (column 2, line 61 - column 3, line 49; column 4, lines 24-28)). Tanaka teaches deproteinized natural rubber having a nitrogen content below 0.02% by weight as stated above. The deproteinization affords rubbers having improved physical properties comparable to those of synthetic rubbers (page 3, lines 1-11). Kondo differs from the claimed invention by failing to specify a deproteinized precursor rubber.

It would have been *prima facie* obvious to deproteinize rubber because Tanaka teaches the procedure to enhance physical properties and Kondo's precursor rubber which is the same as that of Tanaka would be expected to benefit in a like manner from the additive effect.

18.

Claims 1-6 are rejected under 35 U.S.C. § 112, first paragraph, as the disclosure is enabling only for claims limited to modifying rubber by epoxidation and/or grafting with ethylenically unsaturated monomers whereas the claims encompass all modifications and grafting with organic compounds having any

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kind of an unsaturated bond. The enablement is not commensurate in scope with the multiplicity of modifications and unsaturated organic compounds within the broad language of the claims. See M.P.E.P. §§ 706.03(n) and 706.03(z).

19.

Claim 4 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim is indefinite for not specifying the lower limit of detectability at 3280 cm^{-1} . All infrared spectrometers and/or methods, in this case presumably FT-IR, have a lower limit of detectability at any given wavelength or frequency. Merely stating that there is no absorption at a given frequency is indefinite because the specific method and type of instrument are not given. If the intent of this claim is to establish a nitrogen level by a method more sensitive than Kjeldahl it is not deemed an undue burden on applicant to provide the sensitivity of said method so that one skilled in the art would be reasonably apprised of the scope of the claimed invention.

20.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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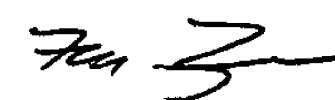
Blythe, U.S. Patent 5,115,021, teaches grafting methylmethacrylate to natural rubber used in tires to improve physical properties (column 1, lines 1-57; column 2, lines 55-61).

Cherrappathanathu, GB 2 098 222 A, teaches deproteinized natural rubber containing less than 0.1% nitrogen by weight (Table 5).

Wallerstein, U.S. Patent 2,097,481, teaches deproteinized natural rubber containing 0.04% nitrogen by weight.
21.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Zitomer whose telephone number is (703) 308-2461.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-2351.



FRED ZITOMER
PRIMARY EXAMINER
GROUP 1500

fz
June 9, 1996